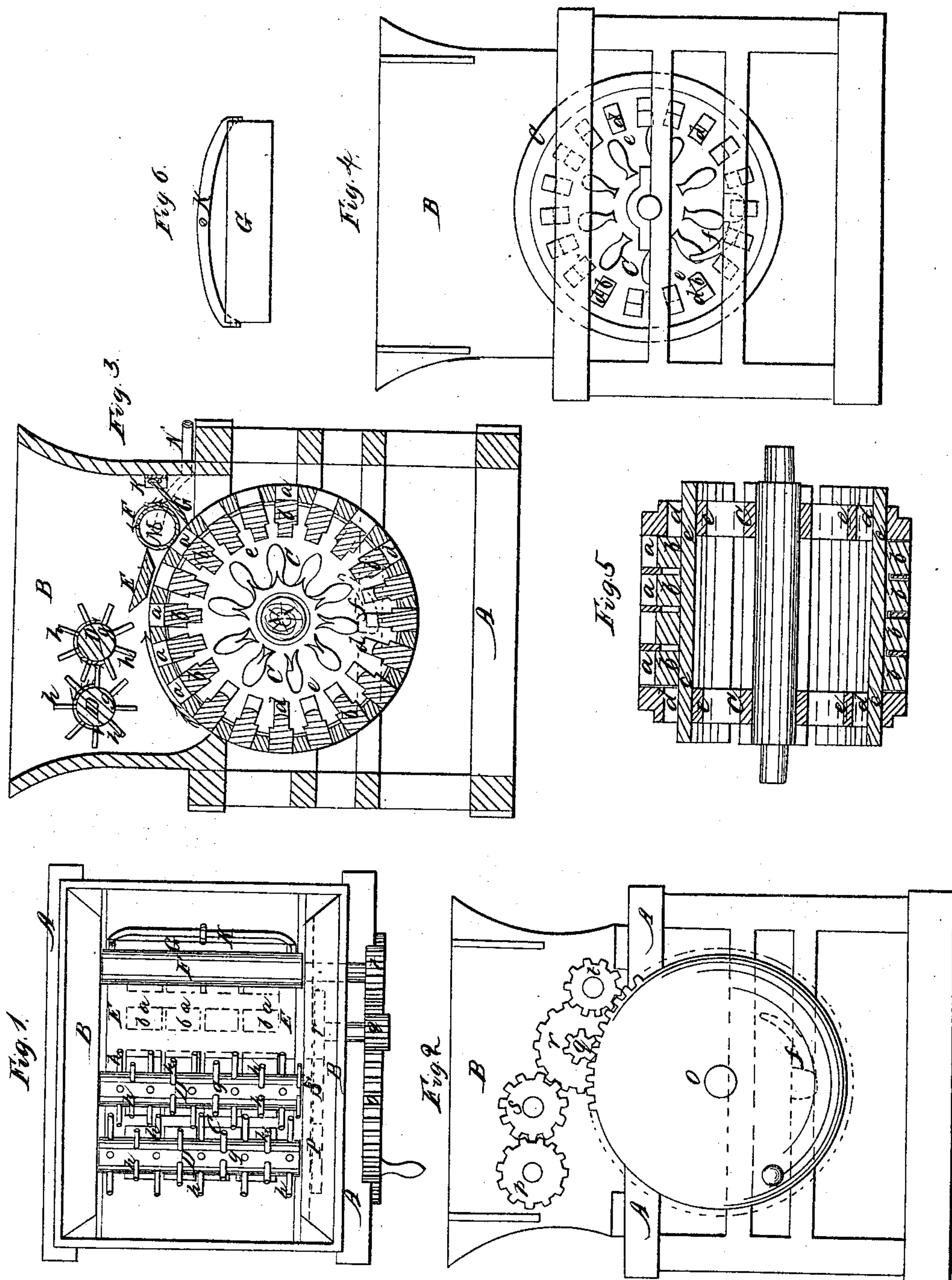


D. Lombard,
Brick Machine,
No 19,470, *Patented Feb. 23, 1858.*



UNITED STATES PATENT OFFICE.

DANIEL LOMBARD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND GEO. F. RICHARDSON, OF SAME PLACE.

BRICK-MACHINE.

Specification of Letters Patent No. 19,470, dated February 23, 1858.

To all whom it may concern:

Be it known that I, DANIEL LOMBARD, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Machine for Making Bricks; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

10 Figure 1, is a top view of such machine; Fig. 2, a front side elevation of it; Fig. 3, a vertical, central and longitudinal section of it; Fig. 4, a rear side elevation of it; Fig. 5, a section of the molding wheel taken in line of its axis; Fig. 6, is a side view of the scraper and its spring as arranged in the hopper.

In these drawings, A, denotes the framework of the machine, such being made to support a hopper B, and a molding wheel C, which revolves under and in the hopper. This wheel has a series of molds or matrices *a, a, a* formed in its periphery, each being furnished with a piston *b*. All these pistons of each line of molds are connected by one bar, *c*, which extends into and through two radial slots, *d, d*, made in the heads *e, e*, of the molding wheel. Curved cams projecting respectively from the two sides of the frame as shown at *f*, in Figs. 2, and 3, serve to depress such pistons while their bars are passing around beneath such cams—the same being for the purpose of expelling the bricks from the molds.

35 Above the molding wheel and in the hopper are placed two or any other suitable number of mixers, D, D, each of which is composed of a drum or shaft, *g*, and a series of arms, *h, h*, projecting from it. The arms of one mixer play between those of the other while the mixers are being revolved.

In advance of the mixers and in the hopper is an inclined gage, E, whose under edge is arranged at a short distance above the molding wheel. Both the rear and front sides of the gage are to be inclined as shown in the drawings. The inclination of the rear side of it with respect to the molding wheel causes the clay to be forced into the molds while the wheel is revolved toward the gage, and besides this, the space between the lower edge of the gage and the molding wheel determines the thickness of clay which should be left on the wheel for the

correct action of the next part of the machine, viz, the condensing roller F. This condensing roller rolls against the external periphery or perimeter of the molding wheel and serves to condense the clay evenly in the molds. It also answers another purpose in connection with the spring scraper and the inclined upper surface of the gage. This spring scraper is shown at G, in advance of the condensing roller. It is a thin plate of metal placed in the hopper as seen in the drawings and borne down on the outer surface of the molding wheel by a spring K. This scraper serves to remove the surplus clay from off the mouths of the molds and reduces the outer surfaces of the bricks therein to plane surfaces. The condensing roller leaves the clay with a curved surface and the scraper reduces the curve on the chord of the arc—such chord being equal in length to the width of a brick mold. The molding wheel should be formed with a polygonal perimeter in such manner as to enable the scraper to reduce the under surface of the clay in each mold to a plane surface parallel to the face of the piston of such mold.

The surplus clay removed by the scraper will be raised by the condensing roller and discharged upon and forced up the inclined plane of the upper surface of the gage and toward and to the mixers by whose action it will be again reduced or mingled with the clay which is in rear of the gage. The directions of the motions of the mixers and condensing roller are indicated by arrows as shown in Fig. 3.

The condenser may be formed as a hollow tube or drum, or with a cylindrical chamber M, within it one of its journals being made tubular and so connected with a steam or hot air pipe N, as that steam or hot air may be caused to pass into the chamber in the condensing roller and heat such roller in order to prevent the clay from adhering to its surface and to cause the roller to work the clay smoother than it would in a solid state.

In Figs. 1, and 2, is shown the system of gearing, by which the mixers and condensing roller may be put in revolution when the molding wheel is rotated, such gears being shown at *o, p*, and *q, r, s, t*, the gear *o*, being on the shaft of the molding wheel,

while the gears *p*, *s*, *t*, are fixed respectively on the shafts of the condensing roller and the mixers.

5 In the operation of the machine, the hopper is to be charged with wet clay. The mixers break it up and reduce it to a proper consistency. The molding wheel forces it forward under the gage which by its resistance and inclined under surface causes the
10 clay to pass into the molds, and depress the pistons in case their own weight should not cause them to descend in the matrices. In passing under the condensing roller, the clay is rolled into and forced into the molds.
15 The scraper next operates to reduce to a plane surface the rolled surface projecting from each mold. Finally the bricks after they are carried out of the hopper are discharged from the molds and may be received upon a board, endless apron or any
20 other convenient means.

Having thus described my improved brick machine, I would remark that I do not claim a molding wheel connected with a hopper, as I am aware that such is not new, but 25

What I do claim is as follows:

1. I claim combining with the brick making machinery, a means of heating the condensing roller, *F*, as described. 30

2. I also claim the combination of the gage *E*, constructed as described, the scraper *G* and the condensing roller, *F*, with the hopper *B*, the moulding wheel *C*, and mixers, *D*, *D*, the whole being arranged as and for 35 the purpose specified.

In testimony whereof, I have hereunto set my signature.

DANIEL LOMBARD.

Witnesses:

R. H. EDDY,
CALEB EDDY.